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TRANSFER SHOCK--THE ACADEMIC PERFORMANCE OF THE JUNIOR COLLEGE TRANSFER.

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IN REVIEWING FINDINGS OF RESEARCH CONDUCTED FROM 1928 THROUGH 1964 RELATIVE TO THE SUCCESS OF JUNIOR COLLEGE TRANSFER STUDENTS, THE AUTHOR CONCLUDES THAT TRANSFER STUDENTS SHOULD EXPECT TO SUFFER AN APPRECIABLE DROP IN GRADES IN THE FIRST SEMESTER AFTER TRANSFER, THAT THEIR GRADES TEND TO IMPROVE IN DIRECT RELATION TO THEIR LENGTH OF SCHOOLING, AND THAT NATIVE STUDENTS AS A GROUP PERFORM BETTER THAN DO TRANSFER STUDENTS. HE CONCLUDES THAT THE STUDENT WHO PLANS TO EARN A DEGREE AT THE BACHELOR'S LEVEL SHOULD BE WARNED OF THE PROBABILITY THAT HE WILL SUFFER A POTENTIALLY SEVERE TRANSFER SHOCK, THAT HE WILL ENCOUNTER GREATER DIFFICULTY THAN THE NATIVE STUDENT, AND THAT HE WILL BE LESS LIKELY TO GRADUATE IN THE NORMAL TIME. AS EVIDENCE FOR HIS CONCLUSIONS, THE AUTHOR CITES 24 STUDIES AND REPORTS. THIS ARTICLE IS PUBLISHED IN "THE JOURNAL OF EXPERIMENTAL EDUCATION," VOLUME 33, NUMBER 3, SPRING 1965. (WO)

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TRANSFER SHOCK: THE ACADEMIC PERFORMANCE OF THE JUNIOR COLLEGE TRANSFER[1]

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AS JUNIOR colleges spring up in profusion over the United States, certain questions assume far more importance than they deserved in the past. When transportation was difficult and when junior colleges were located far from senior colleges, it may not have mattered much to the student or to the counselor whether the student attended a junior college before transferring to his baccalaureate institution. The student often had no real choice. Now when transportation is simple, commuting 30 or 40 miles each way to college is not uncommon, and when junior colleges are often within shouting distance of senior colleges, it is not necessary for the individual to suffer a disadvantage as a consequence of his decision of which to enter. It is important for a counselor to call a student's attention to the potential importance of such a decision and to advise him as soundly as possible on its ramifications.

There are those who would argue that it would be preferable for a student to start his college education in a junior college. In that way he might make a gradual transition to the rigors of college life; he might find faculty who were devoted to teaching rather than to other academic pursuits; he might find that better guidance was obtainable in a smaller student body; and he might be less subject to being taught by mere graduate students. On the other hand, there are those who would argue that by starting in a four-year college or university the student avoids the problem of transfer, and he may obtain better-trained faculty – faculty who are paid well enough so that they can afford to devote their full time to academic endeavors. He is more likely to find a well-supported, professionally-trained, full-time guidance staff, and a lively academic atmosphere in which ideas and research keep faculty competence continuously honed to a fine edge. In such an atmosphere, progress is central; each person is attempting to contribute to his professional speciality; and few persons of mediocre talent survive long as faculty to be endured by students, or as students to hold down the level of instruction offered by the faculty.

With such reasonable but diametrically-opposed arguments available, the thoughtful counselor cannot use mere logic to help a child choose wisely between junior and senior college. He needs some data on the academic experiences of junior college students who transfer to senior colleges. Do they perform better than native students as a result of having a gradual transition, good counseling, teachers oriented toward teaching, etc.? Or do they perform in senior colleges less well than the native students and less well than they themselves performed during junior college? In the material following, the findings from more than a score of studies of this question will be examined.

THE JUNIOR COLLEGE POINT OF VIEW

The perception of the situation that is common among junior college staffs is expressed in the following quotation from an article published in 1954 by S. V. Martorana and L. L. Williams: "Almost invariably the group of junior college transfers considered has been found to do at least as well academically in the latter years at a higher institution as do students in the same fields who have spent all four years at the same institution." (12) Let us examine this assertion.

Martorana and Williams cite three references immediately after making the quoted statement. One is to an article by Rodes, published in 1949 (14). In that article, Rodes asserts that at the University of California's school of engineering there is no significant difference between the scores of junior college transfers and native students on a day-long battery of achievement tests given as students enter the upper division. He cites no data on this point. Later, with no data or citation of a reference, Rodes states, "Studies of relative performance have indicated that junior college graduates do just as well, both in the examinations for admission to the junior year and in the subjects of the jun-

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to that of the transfers. The transfers recovered, obtaining semester-average grades of 1.66 during the eighth semester as compared with 1.17 upon transfer. The upper-division averages of natives and transfers were 1.46 and 1.41, respectively, not very different. However, only 66 percent of the transfers graduated or remained in attendance in December of 1928 compared with 78 percent of the natives.

Those two studies do not support the findings of Martorana and Williams, but at the same time Mitchell and Eells were reported as doing a similar study at Stanford[2]. Studying 510 junior college transfers from 1923 to 1927 they found that the junior college transfers at Stanford scored higher on intelligence tests than the native students, performed superior to native students (after the first quarter at Stanford), and their superiority to natives increased markedly each successive semester. (Apparently, there was even some transfer shock here, since the report implies that the transfers performed superior to natives after their first quarter at Stanford.)

R. R. G. Watt and F. C. Touton, at the University of Southern California, noticed the UCLA, Cal, and Stanford studies, and their disagreement, and decided to conduct the same study at USC (18). They examined the transfers entering Southern Cal between 1922 and 1928, and compared them with 100 randomly-chosen native students. They found that the transfers obtained about .3 grades higher averages in junior college than the natives obtained in the University. The difference dropped to less than .1 letter grades in favor of the transfers during the fifth and sixth semesters, evidence of transfer shock. During the eighth semester, the natives exceeded the transfers by .4 letter grades. Apparently, the transfers at Southern California did not recover from their shock relative to the natives. Watt and Touton also determined that the transfers from state teachers' colleges suffered less shock than did the junior college transfers.

A little later, in 1930, W. S. Allen reported (1) that at Baylor University the junior college transfers performed as well as the natives. He compared 330 transfers entering Baylor between 1910 and 1929 after being graduated from 26 junior colleges. These transfers survived to receive bachelor's degrees. The average grade for these transfers while at Baylor was 83.4. The average grade during the last two years at Baylor for a randomly-selected group of 330 native students was 83.5. Allen gives no data of the transfers' grades at their junior colleges, their academic aptitude, or data concerning drops or rises in the transfers' performance. All we can conclude is that these junior college transfers apparently suffered no permanent handicap in academic performance, assuming that their aptitude was equal to that of the natives. (The Stanford data make that assumption questionable; at Stanford the transfers were superior to the natives in academic aptitude.)

At the University of Arkansas, Gerberich and Kerr studied the junior college transfers who entered between 1928 and 1932 with two years of advanced standing (5). They compared these 215 students with 436 native students who were chosen on a stratified-random basis to match the transfers on sex, age, class, and college at the University. During the first four semesters of college, the native students received average grades of 2.36 while the transfers received junior college grades of 3.25, a statistically significant difference in favor of the junior college transfers. During the fifth semester, when all were at the University, the natives received average grades of 2.43 while the transfers received grades of 2.16 – a shock for the transfers of more than a whole letter grade, on the average. During the fifth through the eighth semesters, the natives averaged 2.55 while the transfers averaged 2.25, evidence that the transfers recovered somewhat from their initial University performance; but they did not raise their performance during this period as much as did the natives, and they regained less than 10 percent of their loss. Only 56 percent of the of the junior college transfers received degrees compared with 65 percent of the natives. These data are very similar to those from the University of California and from UCLA, differing principally in the greater severity of transfer shock at Arkansas.

The Siemens study, which was invoked by Martorana and Williams, was conducted on students entering the University of California to study engineering between 1928 and 1936 (17). Siemens compared 583 natives with 243 students transferring from large California junior colleges. All the included students eventually graduated in engineering. He found that in their work in engineering, the transfers averaged a grade of 1.37 compared to the average grade of 1.29 obtained by natives. Siemens' results are markedly different from the findings on the total group of 1926 junior college transfers to the University of California studied by Rueh, Baker, and Ryce (15). However, remember that Rueh, Baker, and Ryce included all junior college transfers, in all programs at the University, and regardless of whether they were graduated. Siemens studied only the transfers from large, California junior colleges who studied engineering at the University and who graduated from the University.

Not all of Siemens' results differ from the earlier University of California results. Siemens concludes that the junior college transfers hold their own at the University and the junior college grading standards are like those of the University. However, in doing that he ignores certain aspects of his data. The lower division (junior college) average grades of his transfers was 1.55 which dropped to a 1.23 for their

first semester grades in upper-division engineering courses. That is transfer shock of nearly a third of a letter grade. The natives averaged only 1.38 in their lower-division work at the University, but their average for the first semester of upper-division engineering work was a 1.24, practically the same as that of the transfers. There is some recovery from the shock. The transfer's average in all engineering courses is 1.37, a rise from the 1.23 of the first semester of engineering, but not a rise to their junior college performance of 1.55. While the transfers may do as well as the natives, something certainly disrupted their performance upon transfer.

Unfortunately, we do not have data here to ascertain whether the transfers from large junior colleges to the engineering program of the University of California are more intelligent than the native students, as was the case for students during the immediately preceding years at the neighboring institution, Stanford (15). Even Siemen's data, then, are not carefully-controlled support for Martorana and Williams' assertion about the equality of transfer and native performance. His data certainly would cause a counselor to wonder about the wisdom of subjecting a student to the shock of the transition between junior and senior college after his having already struggled through the transition from high school to junior college.

In 1941, an article with the nonpareil title, "Junior College Graduates versus Senior College Juniors", was published by Fichtenbaum (4). He compared the junior college graduates transferring to the University of Texas in 1935, 1936, and 1937 with the juniors at the University who had done all their work at the University. He compared them during their first year at Texas and during the first session after their first year. Altogether there were over 2,500 students involved, so he was dealing with very large groups. He found that about five percent more of the junior college transfers returned for the second year, but the natives had a greater proportion of honor grades (A's and B's) during both years; the natives had higher average grades during both years, by about .2 to .3 letter grades; and the junior college transfers' average grade was less different from the natives' in the second than the first year. There is apparently some recovery from what may have been transfer shock. Fichtenbaum speaks of the period, "...after the junior college graduates have adjusted themselves to University life." (4)

EARLY SCORE

At this point in our chronological sequence we come to the Martorana-Williams era. Let's review to see what our score is at this point. We have considered eight studies with reported data. None controls aptitude experimentally or statistically in order to provide clear evidence that transfers perform as well as natives. One provides evidence that transfers may be academically more talented than natives. None provides evidence to the contrary.

Six of the studies provide data which reveal transfer shock, i. e., the transfers obtain lower average grades immediately after transfer than they received in junior college. One of the eight studies provided no evidence on this point in either direction. The eighth provided no data on junior college grades, but the senior college grades of the transfers were less than those of the natives by a smaller amount during the later period after transfer, and it is suggested that the transfers suffered a period of adjustment.

In five sets of data there is evidence of appreciable recovery from the transfer shock, i.e., as the junior college transfers continue in the senior institution their grade averages improve. They do not always reach their junior college level. In two of the sets of data there was little or no recovery, and in one there is no evidence on this point.

Without regard to control for academic aptitude, four of the sets of data show that natives performed better in upper-division work than did transfers. One indicates that the transfers performed better than the natives. Three indicate that the transfers and the natives performed about equally well during their upper-division years.

One study reports that transfers from institutions other than junior colleges perform better than junior college transfers. To that could be contrasted Grossman's findings at the University of Illinois (7) that female transfers from junior colleges and four-year colleges did equally well in upper-division work, but that for males the junior college transfers obtained upper-division averages about .1 letter grades higher than the transfers from four-year colleges. Two studies indicate that higher proportions of natives graduate.

At this point one must surely wonder how Martorana and Williams reached their conclusion that the almost unanimous decision of research in the years prior to their study was that transfers did at least as well academically as the nontransfers. Martorana and Williams' own data show transfer shock, recovery, and, even with the best equating on aptitude that was possible, a superiority of performance of the native students. Let us see what studies come to hand after their article.

MORE RECENT STUDIES

Junior college transfers to the College of Liberal Arts of Syracuse University were compared with transfers from four-year colleges during the period between 1946 and 1955, in a study reported by Holmes (8). There were 1553 transfers from four-year colleges and 385 transfers from junior colleges during this period. The junior college transfers

showed transfer shock, their grades in the College of Liberal Arts dropping to a 1.3 compared with their 1.6 average in the junior college. (There is no evidence about recovery.)

Honors at graduation were received by 22 percent of the total student body of the College of Liberal Arts, 15 percent of the transfers from four-year colleges, but only 10 percent of the junior college transfers. This implies that the junior college transfers obtained lower average grades than either the natives or the transfers from four-year colleges. Twenty-six percent of the junior college transfers had grades above 2.0 in the junior college, but only 14 percent had grades above that level at Syracuse. The four-year group obtained grades at Syracuse slightly lower than their grades before transfer, but while 19 percent of the four-year transfers had grades above 2.0 before transfer, unlike the junior college group, the percentage rose to 24 after transfer. Since the reported mean grade was 1.4 for the total student body, 1.3 for the junior college transfers, and "in the interval from 1.50 – 1.59" for four-year transfers, we have additional data that junior college transfers perform less well than either the natives or the transfers from four-year colleges.

In 1962, Darley published a book (3) from which data can be extracted which are relevant to our discussion. He presented data for 88 percent of the new freshmen entering Minnesota colleges in September of 1952. For those who entered junior colleges and for those of the junior college entrants who later transferred to the University of Minnesota, the mean high school rank (percentile), the mean raw score on the American Council on Education Psychological Examination (ACE) taken in high school, and the mean college honor-point ratio (A=3.00) appear in Table 1. (The honor-point ratio for the junior college entrants seems to represent their grades for as long as they remained in junior college. The honor-point ratio for the transfers is stated by Darley to include both junior and senior college performance.)

Table 1 shows clearly that, on the average, the students transferring to the University of Minnesota were more able in terms of high-school rank and ACE scores than the total group of junior college entrants. However, their total honor-point ratio for junior and senior college is not higher than the honor-point ratio for the total junior college group. For females, it appears to be noticeably lower. This finding would be expected if transfer shock were a common occurrence for junior college students transferring to the University.

Klitzke, in 1961, reports that, "... research has indicated that Colorado's junior college transfers are significantly inferior to native students of Denver University and of the University of Colorado." (11) He cites three unpublished master's and doctoral theses from the period of 1949 to 1958. Then he reports the data for Colorado State College at Greeley. He studied 231 students who attended one of Colorado's junior colleges for at least six quarters before entering Colorado State between 1953 and 1957. These students were compared with a group of natives matched on the basis of major, sex, and number of hours toward graduation. Klitzke reports no significant differences in ACE scores or high-school rank, in dropouts by quarter, in mean grade-point averages by quarter, or in mean cumulative grades. There is a significant difference between the proportions of natives and transfers who graduated. The percentage for natives is 90, and for transfers it is 78.

Although he does not present the relevant data, Klitzke states, "The students in the junior college transfer group decreased in cumulative grade-point average from junior college to senior college, while the native students increased their cumulative grade-point averages from lower to upper division." This is a report of observed transfer shock. Klitzke reports no difference in academic performance between natives and transfers, but concludes that the transfers are not as academically successful in that they less often graduate.

In 1960 Medsker published a book entitled, "The Junior College: Progress and Prospect." (13) Chapter 5 of that book concerns the performance and retention of transfer students as they attend four-year colleges. In that chapter, Medsker reports on a study involving 16 four-year colleges in eight states. Each college collected data on the performance of junior college transfers. Fourteen sets of data were based on students classed as juniors in the Fall term, 1953. One was based on 1954 juniors, and one was based on 1956 juniors. Over 2,500 transfer students were included. For most of the institutions, comparisons were possible between the performance of the transfers and the performance of native students. Summary tables of the findings appear as Tables 2 and 3.

Table 2 is related to the grade-point averages obtained by natives and transfer students. In the column headed, "Median grade-point average, fall, 1953", it can be seen that in the majority of cases the grade-point averages for transfers are lower than the grade-point averages for natives in this first quarter after transfer.

Recovery from what may have been transfer shock appears in the column labled, "Median grade-point average, spring, 1955." There the grades for natives and transfers are much more similar, for the most part, and sometimes the transfers exceed the natives, notably in Kansas and Michigan. This column refers to grades obtained in what should be these students' last quarter before graduation, or sixth quarter after transfer. Not all the transfers survived to this time. Table 3 reveals that only about 70 percent of those transferring persisted through these two years. Only about 50 percent both

persisted and received degrees. It is probable that many of the rest will continue beyond six quarters and eventually receive degrees. However, since 63 percent of the natives received degrees in Spring, 1955, the implication is that transfers are slower at getting degrees after transfer than are natives.

SUMMARY OF MEDSKER'S RESULTS

In Medsker's report, we have a larger number of colleges than we have considered altogether so far. The tabulation for Medsker's data alone is interesting. There are no data on transfer shock per se in that the junior college grades of the transfers are not reported. In the semester immediately after transfer the natives obtained higher averages than the transfers in 12 out of 16 institutions. The groups were equal in one, and the junior college transfers excelled the natives in three. (Those three were all teacher's colleges in one state, Kansas.)

There appears to be recovery from what might have been transfer shock in 14 out of the 16 institutions, with the recovery being much more pronounced in some than others.

For only 15 of the 16 institutions can comparisons be made of the graduation rate of natives and transfers, but for those 15 the rate for the natives is higher in 13. (The remaining two are colleges in Kansas.)

The results are rather devastating to Martorana and Williams' claim of anything like unanimity of results indicating that junior college transfers perform as well or better than native students. However, it may be well at this point to remind ourselves again of possible uncontrolled variables lurking in the background. Medsker's data include no institution in which academic aptitude for natives and transfers was controlled. It might be that the transfers who persisted to the sixth quarter, for instance, were the more able of the transfers, so the apparent recovery for transfers is, perhaps, merely evidence of continued academic selection in operation. (Only 70 percent of the transfers persisted compared with 80 percent of the natives.) Again, it may be that transfers performed less well in the first quarter after transfer because they were, as a group, less able than the natives. Or it could be that the superiority of performance of the natives is greater than it appears to be, if the transfers here are (like the transfers reported earlier at Stanford) superior to the natives in intellectual quality.

In research in the University System of Georgia it is a very common occurrence to observe that while the average academic aptitude of the students who survive through several years of college is no greater than was the aptitude of the entire entering group, the average college grades are markedly higher during the later years. If this is also the case in the institutions we have been considering in this review, then we should not expect transfer shock at all. We should expect that as the junior college students enter their upper-division work their grades would improve instead of suffer. The shock that does appear, then, may be more severe than the data indicate. On the other hand, if the transfer students are having to make up lower-division requirements during the first quarter after transfer, and if lower-division grading standards are more severe in relation to academic aptitude, perhaps the shock is nothing more than a reflection of poor curriculum articulation between junior and senior college. Also, if the delay in graduation for the transfers is due to their having to make up lower-division requirements, the counselor is well advised to warn the high school student about the common unfortunate adjunct of transfer. The double transition may, indeed, be a more severe handicap than any of the possible benefits of commencing at one institution while planning to graduate at another.

Having been reminded of these qualifications, let us examine additional studies. Hoyt studied the 310 men and 80 women who transferred to Kansas State University from junior colleges in 1954, 1955, or 1956 and who completed at least one semester at Kansas State (9). They were compared with a random sample of natives matched in sex, class and year of first collegiate enrollment. (They were not matched in ACE score or high-school average, apparently.) Transfer shock is evident in these data in that the junior college transfers' junior college grades averaged .25 to .50 letter grades higher than the grades they received after transfer to the University. However, the grades after transfer were not consistently different from the upper-division grades of the Kansas State University natives. Hoyt noticed that the longer a junior college engineering student stays in the junior college, the greater is the drop in his grades upon transfer.

All of the studies we have examined so far have been conducted from the viewpoint of the senior college. The next study in the series was done at a junior college by a junior college administrator. Teel gathered data on the 1958-59 transfers to senior colleges from Georgia Southwestern College. He was able to obtain data on 49 former students. Thirty-one percent of these students received higher grade-point averages at the senior college than at Georgia Southwestern; 69 percent received lower averages at the senior college. These grades showing transfer shock were for the early part of the transfers' senior college career. Teel provided no comparisons with natives, no data on possible recovery, and no information on graduation rate.

An abstract of the findings concerning the academic performance of Florida junior college transfer students in Florida degree-granting institutions, prepared for the fall term of 1959, provides data for 17 junior colleges, 11 senior colleges, and 1,174 students[4]. The students included had earned at

...st 12 semester hours of credit in a junior college ...had attempted at least 12 semester hours in a ...gree-granting institution. Considering all fall, ...ish, junior college students as a single group, ...eir average grade earned in the degree-granting ...stitution was .3 letter grades lower than their ...erage grade in the junior college. This is appre...able transfer shock, especially when one realizes ...at it includes students who may have already ex...rienced some recovery. When the group who ...ansferred prior to 1959 is examined separately, ...eir average in the degree-granting institution is ...ly .1 letter grades lower than in the junior col...ge, on the average. So there apparently is some ...covery from transfer shock in Florida, but the ...mount of shock is somewhat greater than .3 letter ...ades, on the average. (Oddly enough, there is ...me indication that students with lower test scores ...tain better grades in the degree-granting institu...n than they received in the junior college- as ...ough the junior college was not particularly effec...ve with the weaker students.)

A comparison of sorts between the performance ...transfers and natives can be derived from this ...lorida report. The "natives" which can be ex...mined are those from the University of Florida, *Florida State University*, and Florida Agricultural ...d Mechanical University. The students are ap...arently not really natives, but are instead the en...re group of students at these institutions, including ...e transfers. When the transfers' grades at these ...gree-granting institutions are compared with the ...ades of these total junior classes at these institu...ons, the grades of the total junior classes are ...gher than the grades of just the transfers by .2 ...tter grades at the University of Florida and by .1 ...tter grades at Florida Agricultural and Mechanical ...llege. They are equal at Florida State Univer...ty. When the grades at the degree-granting insti...tions of the transfers are compared with the ...ades of the entire senior classes at these institu...ons, the difference in favor of the total senior ...ass over the transfers is .3 letter grades at the ...niversity of Florida and Florida State University, ...d it is .4 letter grades at Florida Agricultural ...d Mechanical University. While the report is not ...s clear as one might want it to be on the details of ...what was compared, there is no way to interpret the ...ata that does not seem to result in superiority, on ...e average, of the performance of the "natives". ...t is not at all easy to tell from the report how great ...e superiority is. The largest difference between ...e performance of "natives" and transfers at the ...nior-year level occurs at the University of Flori...a, the "major state university" as that term is de...ned by Dr. Dorothy Knoell in a major study we shall consider next.

STUDIES IN THE 1960's

Dr. Dorothy Knoell is currently conducting a study of junior college students who transferred to one or another of 40 four-year colleges for the fall term of 1960[5]. While many more of her data will be made public in the near future, we have access to extensive data now from 12 different colleges to which students transferred. Some of those data appear in Table 4 which gives the mean junior college grade-point averages, the mean GPA's for the first term after transfer, and the mean GPA's for the last term for students who persisted for two years after transfer. In every single one of these 12 institutions transfer shock takes place, appearing as lower average grades in the first term after transfer than during the junior college career. It can be seen in Table 4 that for every one of these institutions the grade-point average for the last term after transfer was higher than for the first term after transfer, so recovery does occur. In seven out of 12 colleges, the last term GPA is higher than the junior college GPA, so in those cases recovery is more than complete. Knoell observed that transfers are less likely to raise their GPA's to their junior college level if they have transferred to major state universities rather than to other colleges, that the highest rate of dismissal-for-poor-scholarship of transfers was for males in the major state universities, and that the lowest rate of graduation for transfers was at the major state universities. This is in agreement with the evidence we noted in Florida of transfers being handicapped according to the kind of institution to which they transfer. Knoell's observations about transfers to major state universities should probably be given relatively great weight in our review because Knoell's study involved many institutions.

The Board of Control of Florida conducted a study of the academic performance of transfers from Florida degree-granting institutions in the Fall Term of 1961[6]. In this report, a comparison of all junior college transfer students in all degree-granting institutions (N = 1,328) reveals that the grade-point average in the junior college was .29 letter grades higher than the grade-point average received in the degree-granting institution. When only the 764 junior college transfers who enrolled in a degree-granting institution for the first time in Fall, 1960, are examined, the difference in grade-point average is .38 letter grades. For the 544 who transferred before 1960 the difference was only .17 letter grades. Apparently the difference between .38 and .17 letter grades reflects recovery from the initial year's shock.

When, among the 19 Florida junior colleges, comparisons are made of the transfer students with 60 or more semester hours of junior college credit, for 17 there is a drop in grades upon transfer – the magnitude of the drop ranging from .09 letter grades to .74 letter grades. For only two is there an increase, both of those two being of the magnitude of .02 letter grades. From the information available

to the reviewer, one cannot ascertain precisely how many senior colleges are involved in this report, but clearly the Florida data are again overwhelmingly opposed to a belief that a junior college transfer will maintain his level of performance upon transfer. Transfer shock is a predominant finding in this state. No comparisons between transfers and natives were available, and from the data at hand little can be determined about such matters as graduation rates, transfers from junior versus from four-year colleges, and transfers to major state universities versus to other four-year colleges.

At the University of Georgia, Russel compared natives in the College of Arts and Sciences with transfers to the College from Georgia's junior colleges [7]. Of his 298 subjects, 178 were natives and 120 were transfers. He found that the transfers obtained higher lower-division grades than the natives, but that the two groups' upper-division grades were not distinguishably different from each other. Here we have transfer shock but equivalent performance of transfers and natives. The shock was of a magnitude of about .25 letter grades. We have no information in this study about recovery from the shock, but Russel did note in his data that transfers from public junior colleges performed relatively least well in the University courses in physical sciences. He also found that only 57 percent of transfer students (including transfers from colleges other than junior colleges) graduated on time, while 83 percent of the natives graduated within two or three years after entry into upper-division work.

Willingham studied nearly 1,000 students who transferred into Georgia Institute of Technology from over 200 colleges between 1957 and 1961 [8]. He found that, on the average, transfer students received first year grades at Georgia Tech about .75 letter grades lower than their previous college averages. Here, again, is transfer shock. Since Willingham did not report on what happened to these people after their first year at Tech, we cannot tell how much recovery from the shock took place. However, about 50 percent more transfers withdrew during the first year than did natives (regular freshmen), and 46 percent of the natives entered their second year with passing averages compared to 33 percent for transfers. Transfers are disproportionately often on probation. Thus, transfers are less likely to survive to graduation, or at least to graduation on time, than natives. (It might be noted here that 60 percent of Tech's transfers are freshmen. 36 percent are sophomores, and only four percent are juniors.)

Willingham found that at Georgia Tech the over-all average grade prior to transfer correlated only .33 with the over-all average grade received during the first year after transfer. The low correlation caused him to try to improve prediction of grades for transfers by making adjustments to their average pre-Tech grades according to the college, or kind of college, from which the students came. He divided his 754 transfers who entered Tech from 1957 to 1960 into groups so that within each group: 1) the students came from colleges which were similar in some respects, and 2) the students earned similar grades at Georgia Tech relative to their previous college grades. Ten groups consisted of single colleges. Others were combinations such as, "All junior colleges outside of Georgia." For each group an "adjustment factor" was developed which was approximately the difference between the average over-all grade at Tech and the average over-all grade at the previous institution for all students in that group. Table 5 shows for these groups whether they were junior college students, how many were in the group, the size of the adjustment factor, and the percentage of students who were in Tech with a passing average after the first year.

While nearly all the kinds of institutions from which students transfer to Tech receive negative adjustment factors (evidence of the generality of transfer shock at Tech), the adjustment factors are more negative on the whole for students from junior colleges. (Forty percent of the transfers came from junior colleges, 40 percent from large four-year colleges, and 20 percent from small four-year colleges.) A quick computation, without adjusting for sample sizes, gives the mean negative adjustment for junior college transfers as -1.06, slightly more than a whole letter grade, while the mean adjustment for transfers from other institutions is -.66.

Similar findings appear in the column recording the percentage of students who were in school with a passing average after the first year. The percentage for all the junior college transfers is 25, while for the transfers from other kinds of institutions the percentage is 37. Thus the junior college transfers seem to suffer more severely from transfer shock at Tech than do transfers from four-year colleges. And, while all transfers have a low rate of "satisfactory performance" in these terms, the transfers from junior colleges are less satisfactory than those from four-year colleges. As far as Tech is concerned then, not only do transfers do less well than they did in their previous college and less well than natives do during their first year after transfer, but the transfers from junior colleges do less well than the other transfer students.

Willingham contributed one more helpful detail here in that further analysis revealed that the transfer students make lower grades in quantitative courses than in verbal courses, compared with their previous grades. This seems to agree with Russell's findings that transfers were most weak in the physical sciences.

At the annual meeting of the Southern Association of Collegiate Registrars and Admissions Officers in 1963, Godfrey reported on the admission of transfer students to the University of South Carolina (6). He examined the records of 398 transfers from

colleges and universities who entered in the Fall Semester of 1960 and completed one or more semesters at the University of South Carolina. Of these students, 175 had a "C" average at entrance and also a "C" average on university work. The transfers from junior colleges had the lowest percentage of students who had earned a "C" or better before transferrring and also earned "C" or better after transferring. Only 33 of the 56 junior college transfers (59 percent) kept above C level, while 88 percent of the transfers from large out-of-state institutions performed that well, as did 81 percent of the transfers from public South Carolina senior colleges, 73 percent from private South Carolina senior colleges, and 62 percent from "other" colleges. This study, then says little about transfer shock, but does agree with several of our earlier studies which show junior college transfers to be weaker academic performers than transfers from other kinds of institutions.

Our chronology of data is nearly at an end. In another study done at a junior college, Blanton examined the transfers from Abraham Baldwin Agricultural College to the University of Georgia during the 1962-63 academic year (2). For the 77 students involved he found a drop in grade from the junior college to the senior college of .4 letter grades and interpreted this as transfer shock. The amount of shock seemed to be nearly twice as great for the 27 who transferred without graduating from the junior college.

Finally, Irvine reported that for undergraduates transferring to the University of Georgia during the Fall, Winter, and Spring quarters of 1962 and 1963, the University grade averages for the 559 transferring from junior colleges averaged out to be .3 letter grades lower than the University grade averages of the 294 who transferred from four-year institutions (10). This is another instance of the junior college transfer performing less well than the transfer from another kind of college.

SUMMARY OF FINDINGS

There we have more than 20 studies of the academic performance of the junior college transfer. The number of institutions involved is well into the hundreds; the number of students is well into the tens of thousands. It is a little hard to arrive at a summary tally since some of the studies involved many colleges. If we look at the studies from the point of view of the number of senior institutions with separate data, and count the number of junior colleges reported from the Florida study for which we do not know the number of senior colleges, a fairly sound score comes out about as follows:

There were 46 sets of data relevant to the question of transfer shock. Of those, 44 revealed shock and two showed no shock. Clearly, it is a most prevalent occurrence that junior college transfer students suffer an appreciable loss in their level of grades when they transfer.

Out of 38 sets of data in which a phenomenon like recovery from shock could be observed, 34 showed recovery and 4 showed none. Recovery to some degree from transfer shock is about as prevalent as shock itself, though we did notice that the degree of recovery varies widely.

Out of 33 sets of data relevant to the question of whether native students obtain better grades than transfers, 22 indicated that the natives performed better, 4 indicated that the junior college transfers performed better, and 7 indicated that they performed equally well. The predominance is two to one in the direction opposite to that which Martorana and Williams concluded to be the almost unanimous decision of the studies they had considered.

Of the six sets of data which compared the performance of junior college transfers with the performance of transfers from other kinds of institutions, five found that transfers from other institutions were more successful than junior college transfers. One found that the junior college transfers were more successful.

Out of 21 sets of data that examined whether the junior college transfers took longer than natives to graduate or that considered whether a smaller proportion of transfers than natives graduated, 19 showed the natives to graduate sooner or in greater proportions, and 2 showed the junior college transfers to graduate sooner or in greater proportions.

DISCUSSION

Taking these findings at face value, what should the counselor say to the student who is in a position to choose between entering directly from high school the college from which he desires a bachelor's degree or entering a junior college while planning later to transfer to that desired college? First, the counselor must point out that the bulk of the data from the many years of research indicate that if he enters the junior college and transfers, he can expect to have an appreciable drop in his college grades when he transfers. Probably his grades will recover at least to some extent. Second, after he transfers his grades will, more likely than not, be lower than those of the native students at the college to which he transfers. Third, as a transfer, he will be less likely to survive to graduate from the four year college than if he were a native, and it will probably take him longer than if he were a native. There is some evidence that he will have the most trouble as a transfer in "quantitative" subjects, such as the physical sciences; he will probably not fare as well as a junior college transfer as will the transfers from other kinds of colleges; and he will be particularly handicapped if the college to which he desires to transfer is a major state university.

If a student is undecided, those facts may make up his mind in favor of entering directly the college from which he wants to graduate. That is in clear contrast to the result which might be expected if he were told, in Martorana and Williams' words, "Almost invariably the group of junior college transfers considered has been found to do at least as well academically in the latter years at a higher institution as do students in the same fields who have spent all four years at the same institution." (12)

Certain types of studies might change this picture. Analyses which examine the extent to which transfers are subject to taking required lower-division courses after transfer, and which examine the extent to which lower-division grading standards are disproportionately severe, may reveal the basis for the transfer shock. If it is due to poor articulation, then the counselee can be warned to look out for this for himself as he enters the junior college. Apparently, the colleges don't look out for it for him. Studies of the courses taken by transfer students may also clarify the reason for delay in their graduation. Studies comparing junior college and senior college grading standards may point out another factor in shock and suggest a remedy for it.

Studies comparing the academic aptitude of natives and transfers may be revealing. If the transfers are, unlike Stanford's experience, less academically apt than the natives, we may have an explanation of the greater relative frequency of graduation of natives. Studies which control academic aptitude statistically through analysis of covariance may reveal that with this factor taken into consideration the transfers do regularly perform as well as natives in upper-division work. (Or, it may reveal that the disparity is even greater than it appears to be.)

Even if it turns out that the junior college transfers do less well in upper-division courses than equally apt natives, the junior college is entitled to ask another question. That question is, "Are those bachelor's degree candidates who choose junior colleges in the first place somehow different from those who choose senior colleges?" Are they different in a way for which the junior college cannot be held responsible, but in a way which influences their performance? Might it be that the person who chooses the junior college has a different attitude toward obtaining a baccalaureate degree, which is reflected in transfer shock and in lagging performance? A junior college might start to investigate this point by ascertaining from its entering students which ones had applied to four-year colleges. An analysis of covariance of these students' grades in academic (transfer) courses, with aptitude controlled statistically, might reveal that even in the junior college those who started out with the junior college idea did not perform as well as those who accepted the junior college only as a substitute.

Many colleagues have seen or heard earlier drafts of parts of this review[9]. Friends in junior colleges have sometimes felt that the presentation was an attack on their institutions. To forestall that reaction and to focus attention on the findings of these studies, let the following be entered as a disclaimer. These studies are solely concerned with the "transfer function" of the junior college. Many junior colleges have other functions such as adult education, terminal education, and community service. Nothing reported above is relevant to these worthwhile functions. Nothing reported above should be interpreted as a universal condemnation of junior colleges. Remember that data showed that transfers from some junior colleges experienced no transfer shock[10]. Also while fewer transfers than natives may graduate, still many of the transfers do eventually graduate with four-year degrees; the transfer function of junior colleges is by no means wasted. There are probably many students who do not have the freedom to choose between entering a junior college and transferring as opposed to entering a four-year institution directly. For those people it makes no difference whether they are less successful than natives, whether they are likely to suffer transfer shock, or whether they are less likely than natives to graduate. There can be no question of the value to society of making higher education available to people who could not otherwise take advantage of it. But this does not absolve the counselor from knowing the facts and presenting them honestly to the student who does have the choice to make.

If further investigation does not substantially change the implications of the many studies we have examined above, one might legitimately ask questions about the cause and effect. Could transfer shock merely be a function of the junior colleges having more generous grading standards? Could the shock and the poor performance compared with the natives be due to such things as weak faculty and poor facilities at the junior colleges? Could the junior college product be inferior because junior colleges tend to be small, and like Conant's small high schools, simply cannot afford to have excellent programs in many fields, special library holdings going back many years, etc.? Many junior colleges seem to draw their faculties from the high schools, and in some states junior college faculties are paid on a lower scale than faculty members with the same qualifications and responsibilities at four-year colleges and universities. Junior colleges may have to use as faculty those who have failed as faculty members in senior colleges. Many junior college faculty seem actively to reject the scholarly implications of college faculty membership; they justify their existence as missionaries attempting to salvage the educational lives of borderline students. Can faculty with these attitudes and chosen on these bases be expected to produce the same sorts of students that are normally produced in the university atmosphere?

Questions such as these are not answered by the data we have been examining. Those data can only call our attention to the need for other data which will shed light on these questions. But the counselor and his client should not base their decision making on hypotheses about the reasons for the transfer students' problems. The differences between transfers and natives exist, as far as we can tell, regardless of the reasons for them. The client cannot wait for the situation to be remedied before making his decision. The counselor cannot ethically hide the information from his client merely because these facts seem to be unfair or unfavorable to an educational institution which has many other commendable features and which may have reasons for its failures that are not within its own control. Unless a counselor has trustworthy information to the contrary about transfers from a specific junior college to a specific senior college, he has little choice but to familiarize his client with the general findings presented above. Unfortunately, they do not encourage the baccalaureate bound student to choose to embark on his educational journey in a college other than the one from which he desires to graduate. They especially discourage him from planning to transfer from a junior college. If he chooses that course, he should recognize at the outset the handicaps which he invites.

FOOTNOTES

1. An earlier draft of this paper was presented to the Psychology Section of the 1964 annual meeting of the Georgia Association of Junior Colleges at Abraham Baldwin Agricultural College, Tifton, Georgia.
2. The study by J. P. Mitchell and W. C. Eells, quoted by Ruch and his colleagues, is cited as appearing in the Stanford Faculty Bulletin, No. 13, June 30, 1928.
3. Dr. Teel's report is in mimeographed form. The title is, "Follow-up Study of Georgia Southwestern College Graduates and Transfer Students Who Continued College in Senior Institutions, 1958-59." It appeared in 1963 and is five pages long.
4. The title of this abstract is, "An Abstract of Findings: The Academic Performance of Florida Junior College Transfer Students in Florida Degree-Granting Institutions; Fall Term 1959." It was mimeographed, but it is not dated, and no author is named. It was furnished for this review by Dr. James Wattenbarger, Director of the Division of Community Junior Colleges of the Department of Education of the State of Florida.
5. Knoell's data were reported on the program of Commission XI of the American College Personnel Association at the annual meeting of the American Personnel and Guidance Association held in Boston on April 9, 1963. The title of her paper was, "Preliminary Findings from a Study of the Factors Affecting the Performance of Students Transferring from Two- to Four-Year Colleges." The study is being conducted under the auspices of the Center for the Study of Higher Education of the University of California at Berkeley.
6. The author has not been able to obtain a complete copy of this report. Certain relevant pages have been obtained. The title of the report is, "The Academic Performance of Florida Junior College Transfer Students from Florida Degree Granting Institutions, Fall Term of 1961." It was printed by the Office of the Board of Control. The pages available were 16-20, and 36-37.
7. Russell, J. W. An Analysis of the Academic Performance of Transfer and Native Students and Their Major Fields in the College of Arts and Sciences at the University of Georgia, unpublished doctoral dissertation, University of Georgia, School of Education, 1963.
8. Willingham, W. W. "Prediction of the Academic Success of Transfer Students." Research Memorandum 61-16 from the Office of the Dean of Faculties of Georgia Institute of Technology. December, 1961, 23 pp. + Appendix. Personal communication with the author permitted identification of junior college and four-year college transfers.
9. The author is particularly grateful for the helpful comments received from Dr. Wilson Comer, late President of Abraham Baldwin Agricultural College, Tifton, Georgia; Dr. Thomas Y. Whitley, President of Columbus College, Columbus, Georgia; Dr. Henry L. Ashmore, President of Pensacola Junior College, Pensacola, Florida; Dr. Kenneth M. Wilson, Research Associate of the Southern Regional Education Board, Atlanta; Dr. Dorothy Knoell, Associate Research Psychologist, Center for the Study of Higher Education, University of California, Berkeley; Dr. A. J. Brumbaugh, Consultant to the Southern Regional Education Board; Dr. James L. Wattenbarger, Director of the Division of Community Junior Colleges of the Department of Education of the State of Florida; and to Dr. Logan Wilson and Dr. Elmer West of the American Council on Education. Many of the references would not have been found and many of the points in the discussion would not have been properly emphasized without their help. It would, of course, be unlikely to find all of them in agreement on the details of interpretation of this much data. The author must take sole responsibility for the interpretation presented here.

10. This was true of two of the 19 junior colleges described earlier in the data from the Board of Control of Florida.

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TABLE 1

HIGH SCHOOL RANK, ACE SCORE, AND COLLEGE HONOR-POINT RATIO MEANS FOR MINNESOTA JUNIOR COLLEGE STUDENTS AND FOR JUNIOR COLLEGE STUDENTS TRANSFERRING TO THE UNIVERSITY OF MINNESOTA

	Junior College Students (N = 419)		Junior College Transfers (N = 138)	
	Male	Female	Male	Female
High School Rank	51.4	70.1	64.2	78.2
ACE Score	105.7	105.6	116.4	108.9
Honor Point Ratio	1.28	1.63	1.28	1.47

TABLE 2*

COMPARISON OF GRADE-POINT AVERAGE BETWEEN NATIVE AND TRANSFER STUDENTS IN CERTAIN FOUR YEAR COLLEGES AND UNIVERSITIES
(N = 10, 940)

Institutions	Number of Students Classified as Juniors Fall, 1953		Median Grade-Point Average Fall, 1953		Median Grade-Point Average Spring, 1955	
	Native	Transfers	Native	Transfers	Native	Transfers
Fresno State College	171	116	1.63	1.40	1.81	1.71
Kansas State Teachers College (Emporia)	173	30	1.77	2.00	1.67	1.97
Kansas State Teachers College (Fort Hays)	150	11	1.80	1.82	2.03	2.02
Kansas State College (Manhattan)**	30	30	1.57	1.28	1.77	1.94
Kansas State Teachers College (Pittsburg)	111	68	1.60	1.89	1.60	2.00
Michigan State University	1,336	124	1.53	1.23	1.60	1.75
San Jose State College	288	233	1.68	1.60	1.72	1.71
University of California (Berkeley)	924	397	1.63	1.15	1.78	1.73
Eligible		(184)		1.45		1.84
Ineligible		(213)		1.07		1.60
University of California (Los Angeles)	593	429	1.68	1.21	1.88	1.83
Eligible		(141)		1.43		1.75
Ineligible		(288)		1.10		1.57
University of Southern California	495	321	1.43	1.27	1.57	1.55
University of Georgia +	321	127	1.82	1.80	2.50	2.44
University of Illinois +	1,040	168	1.64	1.19	1.83	1.68
University of Kansas	455	81	1.72	1.26	1.87	1.59
University of Michigan	1,556	129	1.70	1.40	1.70	1.80
University of Mississippi	200	88	1.33	1.33	1.76	1.65
University of Texas	546	197	1.50	1.20	1.67	1.50
Total	8, 391	2,549				

* From The Junior College: Progress a .d Prospect, by Leland L. Medsker, Copyright 1960, McGraw-Hill Book Company, Inc. Used by permission.

** Data are a sampling of native and transfer students matched by sex and curricula

· Class of 1956

: Class of 1954

TABLE 3*

COMPARISON OF RETENTION AND DEGREES RECEIVED BETWEEN NATIVE AND TRANSFER STUDENTS IN CERTAIN FOUR YEAR COLLEGES AND UNIVERSITIES
(N = 10, 940)

Institutions	Number of Students Classified as Juniors Fall, 1953		Percent of Students Persisting Through Spring, 1955		Percent of Students Receiving Degrees Spring, 1955	
	Native	Transfers	Native	Transfers	Native	Transfers
Fresno State College	171	116	86	74	84	54
Kansas State Teachers College (Emporia)	173	30	60	60	45	43
Kansas State Teachers College (Fort Hays)	150	11	64	60	58	54
Kansas State College (Manhattan)**	30	30	79	80	37	53
Kansas State Teachers College (Pittsburg)	111	68	70	63	40	44
Michigan State University	1,336	124	71	78	67	53
San Jose State College	288	233	84	69	72	52
University of California (Berkeley)	924	397	83	66	57	46
Eligible		(184)		77		37
Ineligible		(213)		56		35
University of California (Los Angeles)	593	429	80	66	49	27
Eligible		(141)		67		28
Ineligible		(288)		65		26
University of Southern California	495	321	80	73	67	43
University of Georgia +	321	127	84	83	75	74
University of Illinois ‡	1,040	168	86	60	61	41
University of Kansas	455	81	92	82	65	41
University of Michigan	1,558	129		84		60
University of Mississippi	200	88	81	64	75	60
University of Texas	546	197	95	72	86	66
Total	8,391	2,549				

* From The Junior College: Progress and Prospect, by Leland L. Medsker, Copyright 1960, McGraw-Hill Book Company, Inc. Used by permission.

** Data are a sampling of native and transfer students matched by sex and curricula.

+ Class of 1956

‡ Class of 1954

TABLE 4*

GRADE POINT AVERAGE EARNED AT JUNIOR COLLEGE AND IN THE FIRST AND LAST TERMS AFTER TRANSFER FOR STUDENTS ENROLLED FOR TWO YEARS AFTER TRANSFER

Institution	Junior College GPA	First Term GPA	Last Term GPA	Last Term Better than JC
A	2.86	2.40	2.69	
B	2.62	2.44	2.79	x
C	2.81	2.31	2.59	
D	2.72	2.46	2.74	x
E	2.63	2.34	2.73	x
F	2.97	2.52	2.84	
G	2.70	2.40	2.62	
H	2.58	2.47	2.65	x
I	2.99	2.45	2.65	
J	2.57	2.34	2.65	x
K	2.53	2.43	2.69	x
L	2.52	2.36	2.74	x

*From Dr. Dorothy Knoell, ACPA Paper, April, 1963.

TABLE 5

ADJUSTMENT FACTORS, SAMPLE SIZES, AND PERCENT SATISFACTORY PERFORMANCE OF JUNIOR COLLEGE TRANSFERS (JC) AND OTHER TRANSFERS TO GEORGIA TECH, 1957-1960

Group	Type College	N	Adjustment Factor	Percent Satisfactory
1	JC	25	-1.1	36
2	JC	10	-1.2	30
3	JC	40	- .9	15
4	JC	21	-1.0	29
5	JC	25	-1.3	12
6	JC	20	-1.1	40
7	JC	63	-1.1	16
8	JC	19	-1.1	16
9		25	-1.2	40
10		157	- .6	37
11		64	- .9	30
12	JC	45	- .9	42
13		12	- .5	58
14		19	0	47
15		71	- .6	38
16		58	- .8	33